What is claimed is:

1. A channel data extracting circuit for extracting data for each channel from a frame in which byte data of channels are multiplexed, comprising:

Banyan means for distributing data for respective channels by Banyan switches of planes corresponding to the channels and sequentially aligning word data; and

data control means for transmitting to said Banyan means a control signal representing a channel to which data belongs and controlling operations of the Banyan switches.

2. A circuit according to claim 1, wherein each of the Banyan switches has a plurality of multistage-connected 2 x 2 switches.

3. A circuit according to claim 1, wherein the Banyan switch sets data belonging to an own channel to valid data and sequentially aligns only valid data, and data belonging to another channel to invalid data.

4. A circuit according to claim 1, wherein

said channel data extracting circuit further comprises packet detecting means for analyzing data extracted for each channel to detect a boundary of a

packet inserted into a frame,

said data control means outputs a control signal representing whether data is start data of a packet, to said Banyan means on the basis of the boundary of the packet detected by said packet detecting means, and

said Banyan means outputs, in accordance with the control signal from said data control means, start data so as to be positioned at a start of word data which constitutes a packet.

5. A circuit according to claim 4, wherein said Banyan means inserts idle data after final data of a packet so as to position start data of the packet at a start of word data.

6. A circuit according to claim 1, further comprising:

buffer means for holding data of respective channels output from said Banyan means; and

data selecting means for sequentially reading out and outputting the data held by said buffer means.

7. An STM/Packet hybrid switch comprising:

an STM switch for performing switching processing of an STM frame; and

a packet switch having a channel data

extracting circuit for extracting data of respective channels from a frame in which byte data of channels are multiplexed, said packet switch having a Banyan unit for distributing data for respective channels by Banyan switches of planes corresponding to the channels and sequentially aligning word data, and a data control unit for transmitting to the Banyan unit a control signal representing a channel to which data belongs and controlling operations of the Banyan switches,

wherein said 2 x 2 switches fragment for respective channels an STM frame received from said STM switch, and then performs switching processing for each packet.

8. A channel data extracting method of extracting data for each channel from a frame in which byte data of channels are multiplexed, comprising the steps of:

generating a control signal representing a channel to which data belongs; and

distributing data for respective channels by Banyan switches of planes corresponding to the channels in accordance with the generated control signal, and sequentially aligning word data.

9. A method according to claim 8, wherein each of the Banyan switches has a plurality of multistage-connected 2 x 2 switches.

10. A method according to claim 8, wherein the distributing step comprises the steps of:

setting data belonging to an own channel to valid data;

setting data belonging to another channel to invalid data; and

sequentially aligning only valid data by the Banyan switches.

11. A method according to claim 8, further comprising the steps of:

analyzing data extracted for respective channels to detect a boundary of a packet inserted into a frame,

generating based on the detected boundary of the packet a control signal representing whether data is start data of a packet; and

outputting, in accordance with the generated control signal, start data so as to be positioned at a start of word data which constitutes a packet.

12. A method according to claim 11, further comprising the step of inserting idle data after final data of a packet so as to position start data of the packet at a start of word data.

13. A method according to claim 8, further comprising the steps of:

holding data aligned for respective channels; and

sequentially reading out and outputting the held data.